INDEX TO AGRICULTURAL ENGINEERING

Volume 28 — January to December, 1947

Issue	*Pages*
JANUARY	1- 40
FEBRUARY	41- 80
MARCH	81-128
APRIL	129-176
MAY	177-224
JUNE	225-272
JULY	273-324
AUGUST	325-372
SEPTEMBER	373-428
OCTOBER	429-476
NOVEMBER	477-532
DECEMBER	533-580

This is a combined alphabetical index to the contents of AGRICULTURAL ENGINEERING by authors, regular features, professional interests, and subject matter, including plants and animals concerned, materials, machines, processes, structures, and key words in titles.

A

Adams, Frank (The 1947 Deere gold medalist) 311

AGRICULTURAL ENGINEERING (Agricultural Engineers)
- Ag engineering phases of farm work simplification 14
- Agricultural engineering in comparison (Editorial) 231
- Farm work simplification — a joint problem for management, engineering, and commodity specialists 249
- Agricultural engineering in the reconversion period 283
- Agricultural engineers in water management 345
- Opportunities for human advancement through agricultural engineering 495

Airplane for pest control, Use of the 240

Airplanes and land rigs, The drifting of poisonous dusts applied by 233

Ammonia to the soil, Machinery for applying anhydrous 394

Anderson, Ralph J.
Reducing surface spoilage in ensilage 98

Andrews, W. B.
Machinery for applying anhydrous ammonia to the soil 394

Aronovsky, S. L.
Collection and quality of straw for strawboard 309

Awards (See Medalists)

B

Baggette, Thomas L.
Farm engineering in flame cultivation 548

Bainer, Roy
Precision planting equipment 49

Baler, The twine 501

Balers, Automatic wire hay 503

Barger, E. L.
Curing baled hay 257
New designs for barn hay drying systems 305

Barr, Harold T.
Weed control with 2,4-D 341

Beet drills, Some experiences with 55

Bender, C. B.
Quality hay defined 103

Bennett, H. H.
Engineering in soil conservation 559

Bienemann, R. D.
Safe lightning protection 505

Bierly, Ivan R.
Farm work simplification — a joint problem for management, engineering, and commodity specialists 249

Bjerkan, Arthur J.
Precision planting 54

Boelter, L. M. K.
A discussion of engineering teaching 512

Bonner, Edwin K., Jr.
Garden tractors for truck farming 59

Broiler house, Radiant heating for 109

Brooks, F. A.
The drifting of poisonous dusts applied by airplanes and land rigs 233
Research procedures for cooperative projects with limited personnel 455

Brown, Clair A.
Weed control with 2,4-D 341

Bruhn, H. D.
Flow of air through chopped hay in mow driers 202
The use of heated air for hay curing 251
The fundamentals of mechanical tree planter design and performance 387

Buildings, Farm (See Structures)

C

Calkins, Robert S.
Essential requirements and basic structural types of farm ponds 489

Carreker, John R.
A tractor-operated furrow seeder 553

Carter, Deane G.
Corn and grain conditioning with or without heat 397

Christiansen, J. E.
Some permeability characteristics of saline and alkali soils 147
Installing ground-water piezometers by jetting for drainage investigations 409

Chugg, Grant E.
Calculations for land gradation 461

Clyde, Arthur W.
Shifting the center of pull of a tractor 11
Design of barn hay-curing systems for high, narrow mows 194

Concrete mow floors for dairy barns 546

Condra, G. E.
Ground water in agriculture — III. Ground water in Nebraska 67

CONSERVATION, Soil and Water (See also Drainage, Erosion Control, Hydrology, Irrigation, Soils)
- Rates of runoff from small drainage basins 25
- Ground water in agriculture — III. Ground water in Nebraska 67
- Ground water in California 99
- Agricultural engineers in water management 345
- Essential requirements and basic structural types of farm ponds 489
- Thoughts on pond development 554
- Engineering in soil conservation 559

Consulting work for teacher development, The value of 100

Corn and grain conditioning with or without heat 397

Corn and grain sorghum, Basic principles in drying 335

Corn, Recommendations for mechanical conditioning of soft or high-moisture 352

Cotton production, Mechanization of 543

Cruz, Santiago R.
Garden tractor to replace carabao? (Letter) 24

Cykler, J. F.
Effect of variation in soil water on yield and quality of potatoes 353

D

Dairy production, Simplification in 159

Davidson, J. B.
Greetings from China (Letter) 208

Davis, Everett H.
A state irrigation program 416

Davis, Roy B., Jr.
Mow-drying chopped and long alfalfa hay 105

Supplemental heat in mow drying of hay ... 289

Dehydration, Natural and Artificial (See Drying)

Denney, R. I.
Color for safety warning (Letter) ... 210

Dexter, S. T.
Better quality hay ... 291
Equilibrium moisture content of alfalfa hay ... 295

Dingle, A. Nelson
Agricultural meterology: an introduction ... 151

DRAINAGE, Land
(See also Hydrology)
Drainage surveys in the Texas Gulf Coast area ... 18
Wartime drainage in England ... 63
Installing ground-water piezometers by jetting for drainage investigations ... 409
An experimental mole ditcher ... 493

DRYING — Driers
(See also Ventilation)
Improved duct design for mow hay finishers ... 58
Artificial drying of combined rice ... 62
Supplemental heat in barn hay curing 95
Mow-drying chopped and long alfalfa hay ... 105
Relation of time and operating schedule to hay quality, mold development, and economy of operation ... 141
Comparative efficiency of ensiling, barn curing, and field curing forage crops ... 154
Design of barn hay-curing systems for high, narrow mows ... 194
Effect of moisture content on drying requirements and nutrient losses in chopped forage dried on mow hay finishers ... 195
Flow of air through chopped hay in mow driers ... 202
Hay density in relation to various factors ... 205
The use of heated air for hay curing 251
Air distribution through long, loose hay in high, narrow mows ... 254
Curing baled hay ... 257
Air flow through baled hay ... 259
Heat generated in chopped hay and its relation to the drying effect ... 286
Supplemental heat in mow drying of hay ... 289
Better quality hay ... 291
The status quo of barn hay drying ... 294
Equilibrium moisture content of alfalfa hay ... 295
Drying baled hay with forced air ... 301
New designs for barn hay drying systems ... 305
Basic principles in drying corn and grain sorghum ... 335
Corn and grain conditioning with or without heat ... 397
The mechanics of rice drying ... 411

Dry matter loss in haymaking due to bacterial action ... 243

Duffee, F. W.
The status quo of barn hay drying ... 294

Dusters, A new dust feed mechanism for crop ... 551

Dutton, W. C.
Chemical weed and plant control ... 339

Dynamometer for traction and power take-off power measurements, Transmission ... 19

E

EDITORIALS
Applied technical progress ... 9
Vigorous leaders ... 9
Possibilities in atomic fission ... 9
Strengthening our foundations ... 47
The world in which we work ... 47
Renaissance in China ... 89
Engineering factors in farm costs ... 89
Machine sheds ... 89
Example of productive research ... 135
The customer factor in business ... 135
Physical properties of agricultural materials ... 135
Ideas on chemurgy ... 187
Opportunities in farm safety week ... 231
Wanted: A force feeder for corn ... 231
Agricultural engineering in comparison ... 231
Professional unity in engineering ... 281
Marketing agricultural residues ... 281
Custom work ... 281
Emergency action ... 333
An influence for engineering progress 333
Work-flow-chart applications in agriculture ... 333
Follow-up on corn conditioning ... 385
Re-evaluation in research ... 385
"It can't happen here" (Letter) ... 385
Rural electric preferred ... 435
Engineering in commodity problems ... 435
Collaboration in research ... 435
Engineering influences on civilization ... 487
World interest in ag engineering ... 487
Obtaining support for research ... 487
Engineering interpretation of human problems ... 541
Implications of economic demand ... 541

Edminster, T. W.
Applying stubble-mulch tillage in Virginia ... 507

Education, The aims and objects of higher ... 157

Edwards, Felix E.
Machinery for applying anhydrous ammonia to the soil ... 394

ELECTRIFICATION, Rural
(See also Refrigeration)
Electrification through agricultural engineering ... 13
Ag engineers shine in Virginia farm electrification ... 140
Electric milk pasteurizers for farm dairies ... 556

Ellison, O. T.
Soil erosion studies —
Part VI. Soil detachment by surface flow ... 402
Part VII. Soil transportation by surface flow ... 442

Ellison, W. D.
Soil erosion studies —
Part I ... 145
Part II. Soil detachment hazard by raindrop splash ... 197
Part III. Some effects of soil erosion on infiltration and surface runoff ... 245
Part IV. Soil erosion, soil loss, and some effects of soil erosion 297
Part V. Soil transportation in the splash process ... 349
Part VI. Soil detachment by surface flow ... 402
Part VII. Soil transportation by surface flow ... 442

Engineering teaching, A discussion of 512

Ensilage, Reducing surface spoilage in 98

Ensiling, barn curing, and field curing forage crops, Comparative efficiency of ... 154

EROSION CONTROL, Soil
(See also Hydrology, Soils)
Soil erosion studies —
Part I. ... 145
Part II. Soil detachment hazard by raindrop splash ... 197
Part III. Some effects of soil erosion on infiltration and surface runoff ... 245
Part IV. Soil erosion, soil loss, and some effects of soil erosion 297
Part V. Soil transportation in the splash process ... 349
Part VI. Soil detachment by surface flow ... 402
Part VII. Soil transportation by surface flow ... 442
Land-use practices on runoff and erosion from agricultural watersheds ... 563

Eshelman, John B.
Radiant heating for broiler house ... 109

F

Flame cultivation, Farm engineering in 548

Forage crops, Comparative efficiency of ensiling, barn curing, and field curing 154

Forage harvester, The field 497

French, O. C.
Use of the airplane for pest control... 240

G

Gain, Elmer W.
Wartime drainage in England..... 63

Garden tractor to replace carabao?..... 24

Garden tractors for truck farming..... 59

Giese, Henry
New designs for barn hay drying systems 305
(The 1947 McCormick gold medalist) 311
The withdrawal resistance of roofing nails 445

Glaves, A. H.
A new dust feed mechanism for crop dusters 551

Glaze, R. A.
Framing farm buildings 437

Grinnells, C. D.
Drying baled hay with forced air..... 301

Ground water in agriculture — III. Ground water in Nebraska 67

Ground water in California 99

Guelle, C. E.
Precision planting of beets and corn 56

H

Hansen, E. L.
Greetings from China (Letter)..... 208

Harrold, L. L.
Land-use practices on runoff and erosion from agricultural watersheds 563

Hauger, Roy L.
Drainage surveys in the Texas Gulf Coast area 18

Hay, Air flow through baled 259

Hay and its relation to the drying effect, Heat generated in chopped..... 286

Hay, Better quality 291

Hay, Curing baled 257

Hay curing, Supplemental heat in barn 95

Hay-curing systems for high, narrow mows, Design of barn 194

Hay curing, The use of heated air for 251

Hay defined, Quality 103

Hay density in relation to various factors 205

Hay drying systems, New designs for barn 305

Hay drying, The status quo of barn..... 294

Hay, Equilibrium moisture content of alfalfa 295

Hay finishers, Effect of moisture content on drying requirements and nutrient losses in chopped forage dried on mow 195

Hay finishers, Improved duct design for mow 58

Hay in high, narrow mows, Air distribution through long, loose 254

Hay in mow driers, Flow of air through chopped 202

Hay, Mow-drying chopped and long alfalfa 105

Hay quality, mold development, and economy of operation, Relation of time and operating schedule to 141

Hay, Supplemental heat in mow drying of 289

Hay with forced air, Drying baled..... 301

Haymaking due to bacterial action, Dry matter loss in 243

Heating for broiler house, Radiant..... 109

Henderson, S. M.
Negative radiation — its relation to farm building design 137

Hendrix, A. T.
Air flow through baled hay 259
Heat generated in chopped hay and its relation to the drying effect..... 286

Heth, Sherman C.
Use of strain gages for farm equipment design 509

Hickok, R. B.
Industrial utilization of straw (Letter) 472

Hienton, Truman E.
Forced ventilation for dairy barns and poultry houses 406

Hines, R. C., Jr.
Applying stubble-mulch tillage in Virginia 507

Hodgson, R. E.
Comparative efficiency of ensiling, barn curing, and field curing forage crops 154

Hoff, Paul R.
Simplification in dairy production 159
Farm work simplification — a joint problem for management, engineering, and commodity specialists 249

Holman, Leo E.
Corn and grain conditioning with or without heat 397

Hosterman, W. H.
Comparative efficiency of ensiling, barn curing, and field curing forage crops 154

Huffman, C. F.
Better quality hay 291

Hukill, William V.
Basic principles in drying corn and grain sorghum 335

Hydraulic control for trailing implements 91

HYDROLOGY — Hydraulics
Runoff as a phase of agricultural hydrology 29

I

Implement house layouts, A basis for planning farm 15

Implements, Farm (See Machinery)

Insulation board in laying houses, Use of 354

IRRIGATION
Irrigation sprinkler characteristics..... 160
Effect of variation in soil water on yield and quality of potatoes..... 353
A state irrigation program 416
Light-weight portable pipe for irrigation 567

J

Johnston, C. N.
Ground water in California 99
Irrigation sprinkler characteristics..... 160

Jones, F. D.
Automatic wire hay balers 503

K

Kaiser, W. G.
A basis for planning farm implement house layouts 15

Kramer, Arthur
Improved duct design for mow hay finishers 58

Kramer, Harold A.
The mechanics of rice drying 411

Krimgold, D. B.
Rates of runoff from small drainage basins 25
Runoff as a phase of agricultural hydrology 29

L

Land gradation, Calculations for 461

Lathrop, E. C.
Economics of straw utilization 308

Lightning protection, Safe 505

Lillard, J. H., Jr.
Applying stubble-mulch tillage in Virginia 507

Long, J. Dewey
Designing plywood silos ... 189
(Correction) ... 464

Lovvorn, R. L.
Drying baled hay with forced air ... 301

Lyon, H. A.
Coordinating research and development of joint interest to agriculture and industry ... 343

M

MACHINERY, Farm
(See also Dehydration, Erosion Control, Tractors)
A basis for planning farm implement house layouts ... 15
Precision planting equipment ... 49
Precision planting ... 54
Some experience with beet drills ... 55
Precision planting of beets and corn 56
Hydraulic control for trailing implements ... 91
The drifting of poisonous dusts applied by airplanes and land rigs ... 233
Use of the airplane for pest control ... 240
Recommendations for mechanical conditioning of soft or high-moisture corn ... 352
The fundamentals of mechanical tree planter design and performance ... 387
Engineering and agronomic phases of mulch culture ... 391
Machinery for applying anhydrous ammonia to the soil ... 394
Sweet potato planting machinery ... 415
The field forage harvester ... 497
The buck rake ... 500
The twine baler ... 501
Automatic wire hay balers ... 503
Applying stubble-mulch tillage in Virginia ... 507
Use of strain gages for farm equipment design ... 509
Mechanization of cotton production ... 543
Farm engineering in flame cultivation 548
A new dust feed mechanism for crop dusters ... 551
A tractor-operated furrow seeder ... 553

Mayer, I. D.
Ag engineering phases of farm work simplification ... 14

McCall, R. J.
Transmission dynamometer for traction and power take-off power measurements ... 19

McCalmont, J. R.
Forced ventilation for dairy barns and poultry houses ... 406

McColly, H. F.
Greetings from China (Letter) ... 208

McNeal, Xzin
Artificial drying of combined rice ... 62

MEDALISTS, (Frank Adams, Henry Giese) The 1947 A.S.A.E. Gold ... 311

Meek, Wm. E.
Mechanization of cotton production ... 543

Meterology: an introduction, Agricultural ... 151

Milk coolers to home freezers, Conversion of used ... 113

Miller, Harry
Dry matter loss in haymaking due to bacterial action ... 243

Molander, E. G.
Wind loads on farm buildings ... 22

Mole ditcher, An experimental ... 493

Montfort, P. T.
Supplemental heat in barn hay curing ... 95

Moore, R. E.
Opportunities for human advancement through agricultural engineering ... 495

Mulch culture, Engineering and agronomic phases of ... 391

N

Nails, The withdrawal resistance of roofing ... 445

NECROLOGY
Christian I. Gunness ... 34
Wayne H. Carver ... 36
Stanley M. Elliott ... 74
Herman Moschel ... 122
K. J. T. Ekblaw ... 166
Henry Charles Gotcher ... 266
John C. Bursik ... 318
Donald L. Hitch ... 366
Walter L. Churchman, Gillis C. Kellaher, Milton L. Stanius, G. E. Wenzloff, August F. Whitfield ... 424
Gerald Geraldson, Albert O. Kay ... 526

Nelson, G. L.
A basis for planning farm implement house layouts ... 15
Concrete mow floors for dairy barns 546

Nichols, Mark L.
Agricultural engineering in the reconversion period ... 283

Nutt, Geo. B.
Engineering and agronomic phases of mulch culture ... 391

P

Palmer, Howard T.
Ag engineer moves earth (Letter) ... 210

Park, Joseph K.
Sweet potato planting machinery ... 415

Partridge, R. L.
Some experiences with beet drills ... 55

Pasteurizers for farm dairies, Electric milk ... 556

Peele, T. C.
Engineering and agronomic phases of mulch culture ... 391

Peikert, F. W.
Light-weight portable pipe for irrigation ... 567

Perkins, B. G.
Why not build dairy barns that the cows can pay for? ... 464

Permeability characteristics of saline and alkali soils, Some ... 147

Piezometers by jetting for drainage investigations, Installing groundwater 409

Pillsbury, A. F.
Installing ground-water piezometers by jetting for drainage investigations ... 409

Pipe for irrigation, Light-weight portable ... 567

Planting equipment, Precision ... 49

Planting of beets and corn, Precision ... 56

Planting, Precision ... 54

Plywood silos, Designing ... 189
Correction ... 464

Pond development, Thoughts on ... 554

Ponds, Essential requirements and basic structural types of farm ... 489

Potter, Dr. A. A.
The aims and objects of higher education ... 157

POWER, Farm
(See also Electrification, Machinery, Tractors)
Transmission dynamometer for traction and power take-off power measurements ... 19

Pressure-membrane apparatus — construction and use ... 451

Prudon, Clark
How much to invest in a barn (Letter) ... 569

R

Radiation — its relation to farm building design, Negative ... 137

Rake, The buck ... 500

REFRIGERATION
Economics of farm freezers ... 111
Conversion of used milk coolers to home freezers ... 113

RESEARCH (For procedure and results of specific research work, see corresponding subject-matter headings)
Example of productive research ... 135

Coordinating research and development of joint interest to agriculture and industry ... 343
Collaboration in research ... 435
Research procedures for cooperative projects with limited personnel ... 455

Richards, L. A.
Pressure-membrane apparatus—construction and use ... 451

Rice, Artificial drying of combined ... 62

Rice drying, The mechanics of ... 411

Richey, C. B.
The buck rake ... 500

Roofing nails, The withdrawal resistance of ... 445

Runoff as a phase of agricultural hydrology ... 29

Runoff from small drainage basins, Rates of ... 25

S

SAFETY, Farm
Opportunities in farm safety week (Editorial) ... 231

Sater, Lenore E.
Economics of farm freezers ... 111

Schaenzer, J. P.
Electric milk pasteurizers for farm dairies ... 556

Schoenleber, L. G.
Comparative efficiency of ensiling, barn curing, and field curing forage crops ... 154
Effect of moisture content on drying requirements and nutrient losses in chopped forage dried on mow hay finishers ... 195

Scholl, O. F.
The twine baler ... 501

Schroeder, E. W.
An experimental mole ditcher ... 493

Schwantes, A. R.
Use of insulation board in laying houses ... 354

Seeder, A tractor-operated furrow ... 553

Seitz, C. E.
Ag engineers shine in Virginia farm electrification ... 140

Shedd, C. K.
Curing baled hay ... 257
New designs for barn hay drying systems ... 305

Sheldon, W. H.
Better quality hay ... 291
Equilibrium moisture content of alfalfa hay ... 295

Shepherd, J. B.
Comparative efficiency of ensiling, barn curing, and field curing forage crops ... 154
Effect of moisture content on drying requirements and nutrient losses in chopped forage dried on mow hay finishers ... 195

Shiozawa, Sam
Electric milk pasteurizers for farm dairies ... 556

Short, John A.
Agricultural engineers in water management ... 345

Silos, Designing plywood ... 189
Correction ... 464

Simplification, Ag engineering phases of farm work ... 14

Simplification in dairy production ... 159

Singley, L. S.
Air distribution through long, loose hay in high, narrow mows ... 254

Smith, D. D.
Building a soil deeper ... 347

SOILS (See also Erosion Control, Conservation)
Some permeability characteristics of saline and alkali soils ... 147
Building a soil deeper ... 347
Pressure-membrane apparatus — construction and use ... 451

Spreader room added to dairy barns (Letter) ... 363

Sprinkler characteristics, Irrigation ... 160

Stere, J. B.
Air distribution through long, loose hay in high, narrow mows ... 254

Stone, Archie A.
Greetings from China (Letter) ... 208

Strain gages for farm equipment design, Use of ... 509

Straw for strawboard, Collection and quality of ... 309

Straw utilization, Economics of ... 308

STRUCTURES, Farm
A basis for planning farm implement house layouts ... 15
Wind loads on farm buildings ... 22
Radiant heating for broiler house ... 109
Negative radiation — its relation to farm building design ... 137
Designing plywood silos ... 189
Use of insulation board in laying houses ... 354
Framing farm buildings ... 437
The withdrawal resistance of roofing nails ... 445
Why not build dairy barns that the cows can pay for? ... 464
Safe lightning protection ... 505
Concrete mow floors for dairy barns 546
How much to invest in a barn (Letter) ... 569

Stubble-mulch tillage in Virginia, Applying ... 507

Sweet potato planting machinery ... 415

T

Tanquary, E. W.
Hydraulic control for trailing implements ... 91

Teacher development, The value of consulting work for ... 100

Teaching, A discussion of engineering ... 512

Terracing (See Erosion Control)

Terry, C. W.
Relation of time and operating schedule to hay quality, mold development, and economy of operation ... 141

Tillage in Virginia, Applying stubble-mulch ... 507

TRACTORS, Farm (See also Power)
Shifting the center of pull of a tractor ... 11
Garden tractor to replace carabao? ... 24
Garden tractors for truck farming ... 59

Tracy, Thomas B.
Conversion of used milk coolers to home freezers ... 113

Tree planter design and performance, The fundamentals of mechanical ... 387

Trenk, F. B.
The fundamentals of mechanical tree planter design and performance ... 387

Tysdal, H. M.
Comparative efficiency of ensiling, barn curing, and field curing forage crops ... 154

V

VENTILATION (See also Drying)
Forced ventilation for dairy barns and poultry houses ... 406

W

Wagner, R. E.
Comparative efficiency of ensiling, barn curing, and field curing forage crops ... 154

Waldron, Dorothy I.
Equilibrium moisture content of alfalfa hay ... 295

Walker, H. B.
The value of consulting work for teacher development ... 100

Water management, Agricultural engineers in ... 345

Weaver, John W., Jr.
Drying baled hay with forced air ... 301

Weed and plant control, Chemical 339

Weed control with 2,4-D 341

Westerberg, R. W.
Black eye for a blessing? (Letter) 210
Spreader room added to dairy barns (Letter 363

Whisler, Paul A.
The field forage harvester 497

White, H. B.
Use of insulation board in laying houses 354

Whitt, D. M.
Building a soil deeper 347

Wind loads on farm buildings 22

Woodruff, C. M.
Building a soil deeper 347

Work simplification — a joint problem for management, engineering, and commodity specialists, Farm 249

Z

Zerfoss, George E.
Hay density in relation to various factors 205

Zingg, Austin W.
Thoughts on pond development 554

15